

What is claimed is:

- 1 1. A sealing structure for multi-chip modules, comprising:
2 a wiring board having one face mounted with a plurality of semiconductor
3 devices and another face having connecting pins arranged thereover;
4 a frame having a thermal expansion rate compatible with that of the wiring
5 board, provided on the circumference of that face of the wiring board mounted with the
6 semiconductor devices;
7 a cap covering the plurality of semiconductor devices, the cap having a
8 thermal expansion rate different from that of the frame;
9 a heat conducting material provided between the plurality of
10 semiconductor devices and the cap for transmitting heat generated by the plurality of
11 semiconductor devices to the cap;
12 an attachment for fixing the frame and the wiring board to each other; and
13 an intervening member disposed between the frame and the cap for joining
14 the frame and the cap to each other.
- 1 2. A sealing structure for multi-chip modules as in claim 1 wherein
2 the intervening member comprises an elastic substance.
- 1 3. A sealing structure for multi-chip modules as in claim 2 wherein
2 the intervening member comprises an O-ring.
- 1 4. A sealing structure for multi-chip modules as in claim 2 wherein
2 the intervening member comprises packing.
- 1 5. A sealing structure for multi-chip modules as in claim 1 wherein
2 the intervening member comprises a sliding member.
- 1 6. A sealing structure for multi-chip modules as in claim 5 wherein
2 the sliding member comprises plastic material.
- 1 7. A sealing structure for multi-chip modules as in claim 1 wherein
2 the cap comprises an air-cooled heat sink.

1 8. A sealing structure for multi-chip modules as in claim 1 wherein
2 the wiring board comprises a ceramic material, the cap comprises at least one of
3 aluminum and copper, and the frame comprises a ferronickel alloy.

1 9. A sealing structure for multi-chip modules comprising:
2 a wiring board having one face mounted with a plurality of semiconductor
3 devices and another face having connecting pins arranged thereover;
4 a first frame having a thermal expansion coefficient compatible with that
5 of the wiring board, the first frame provided on a periphery of the face of the wiring board
6 mounted with the semiconductor devices;
7 a second frame disposed over the first frame;
8 a cap having a circumference and having a thermal expansion coefficient
9 different from that of the first and second frames and covering the plurality of
10 semiconductor devices;
11 a heat conducting material disposed between the cap and the plurality of
12 semiconductor devices for transmitting heat from the semiconductor devices to the cap;
13 an attachment to fix the first frame and the wiring board to each other; and
14 a fastener for fastening the first and second frames and the cap together via
15 an intervening member.

1 10. A sealing structure for multi-chip modules as in claim 9 wherein
2 O-ring grooves are provided in one face of the first frame and one face of the second
3 frame, and the cap is fastened between the first frame and the second frame using at least
4 one O-ring.

1 11. A sealing structure for multi-chip modules as in claim 10 wherein
2 an elastic member is provided between a side face of the cap and a face of the first frame.

1 12. A sealing structure for multi-chip modules as in claim 9 wherein
2 elastic packing is provided between the first frame and the second frame so as to cover
3 the circumference of the cap.

1 13. A method of sealing multi-chip modules which modules include a
2 wiring board over which a plurality of semiconductor devices are mounted, a frame

14 fastening the first frame and the second frame together.

1 15. A method as in claim 13 wherein the first frame and the second
2 frame are mechanically connected together.